

pregnant Token of that general Inundation, durable as the vain glorious Egyptian Monarchs Pyramids at *Memphis*; to be perpetuated in the lasting Records of this Society. See the Figure of this Impression, in Tab. I.

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IV. *A curious Description of the Strata observ'd in the Coal-Mines of Mendip in Somersetshire; being a Letter of John Strachey Esq; to Dr. Robert Welsted, M. D. and R. S. Soc. and by him communicated to the Society.*

**I** Now send you the Observations which I sometime since promised you, relating to the different *Strata of Earths and Minerals* found principally in the Coal-Mines in my Neighbourhood. For the better Illustration whereof, I have inclosed a Draught, which you must suppose the Section of a Coal-Country, and to take in about Four Mile from the North-West to South-East, and may be applied to the Veins of Coal as they lye at *Faringdon-Courney*, and likewise at *Bishop-Sutton*, which last Place is near *Stony*, but in the Parish of *Chew Magna* in this County of *Somerset*. For Discovery of Coal, they first search for the *Crop*, which is really Coal, tho' very friable and weak, and sometimes appears to the Day, as they term it; or else for the *Cliff*, which is dark or blackish Rock, and always keeps its regular Course as the Coal does, lying obliquely over it. For all Coal lies shelving like the Tyle of a House, not perpendicular nor horizontal, unless it be broken by a *Ridge*, which is a parting of Clay, Stone, or Rubble; as if the Veins by some violent Shock were disjointed and broken, so as to let in

in Rubble, &c. between them. The Obliquity or *Pitch*, as they term it, in all the Works hereabout, is about 22 Inches in a Fathom; and when it riseth to the Land is called the *Crop*, but in the North *Bassetting*. In the Works near *Story*, and likewise at *Faringdon* it riseth to the North West, and pitcheth to the South East; but the farther they work to the South West, the *Pitch* enclines to the South; and *è contra*, when they work towards the North East. So likewise they observe, as they work to the South West, when they meet with a *Ridg* it causeth the Coal to *trap up*, that is, being cut off by the *Ridg*, they find it over their heads, when they are thro' the *Ridg*: but on the contrary, when they work thro' a ridg to the *North East*, they say it *traps down*, that is, they find it under their feet.

*Coal* is generally dug in *Valleys* or low *Grounds*. The Surface in these parts is mostly a red *Soyl*, which under the first or second Spitt degenerates into *Malm* or *Loom*, and often yields a Rock of Reddish *Firestone*, till you come to four, five, and many times to twelve or fourteen Fathom depth, when by degrees it changeth to a *Gray*, then to a Dark or Blackish Rock, which they call the *Coal Clives*. These always lye shelving and regular as the *Coal* doth. But in these parts they never meet with *Firestone* over the *Coal*, as at *Newcastle* and in *Staffordshire*. These *Clives* vary much in Hardness, in some places being little harder than *Malm* or *Loom*, in others so hard as that they are forced to split them with *Gunpowder*: So likewise in Colour, the top inclining to red or grey, but the nearer to *Coal* the blacker they grow; and wheresoever they meet with them they are sure to find *Coal* under them. But to their disappointment 'tis not always worth the the digging. The first or uppermost Vein at *Sutton*

is called the *Stinking Vein*. It is hard Coal fit for Mechanick uses, but of a sulphurous Smell. About five Fathom and half, seldom more than seven Fathom under this, lies another Vein, which from certain Lumps of Stone mixt with it like a *Caput mortuum* not Inflammable, called *Cats-head*, they call the *Cathead Vein*. About the same Depth under this again lies the *Three Coal Vein*, so called because it's divided into three different Coals; Between the first and second Coal is a Stone of a foot, in some places two feet thick; but the middle and third Coal seem placed loose on each other, without any separation of a different Matter. These three Veins before-mentioned are sometimes work'd in the same Pit: But the next Vein which I am going to mention is generally wrought in a separate Pit; for tho' it lies the like depth under the other, the *Cliff* between them is hard and subject to Water; wherfore I have represented a Pit sunk thro' the three Upper Veins at A. and another sunk upon the *three Coal Veins* only at B. and so if they sink on any of the lower Veins they go more to the North West. See Fig. Tab. II.

Next under the *three Coal Veins* is the *Peaw Vein*, so denominated because the Coal is figured with Eyes resembling a Peacock's Tayl, gilt with Gold, which Bird in this Country Dialect is called a *Peaw*. The *Cliff* also over this Vein is variegated with *Cockle-shells* and *Fern Branches*, and this is always an Indication of this Vein, which, as I before hinted, is always searched for about 15 Fathom to the North West of the former.

Under this again between five and six Fathom lies the *Smith's Coal Vein*, about a yard thick; And near the same depth under that again the *Shelly Vein*: And under that a Vein of 10 Inches thick, which being little valued, has not been wrought to any purpose.

Some say there is also another under the last, but that

that has not been proved within Man's Memory. At Faringdon they have the same Veins, which, as I am informed, agree in all Parts with those of Bishop-Sutton before-mention'd. But as Faringdon lies four Miles South-East from Bishop-Sutton, so, in the regular Course, they would lye a Mile and  $\frac{1}{2}$  deeper than those at Sutton. But as in fact they are dug near the same Depth, it follows there must be a Trap, or several Traps down, which in all must amount to that Depth between the said Works;

Between *Faringdon* and *High-Littleton* the same Veins seem to retain their regular Course; but at *Littleton* their undermost and deepest Vein is the best Coal, which at *Faringdon* proves small.

On the other hand, in the Parish of *Stanton-Drew*, to the North-East of the Coal-Works at *Sutton* aforesaid, about a Mile distant, and in the true Course with those at *Sutton*, the same Veins are found again. But here they wind a little, and their Course or Drift runs almost North, and they dip to the East; which Winding is attributed to *Ridges*, which the Workmen have met with on both Sides, and have occasion'd them to discontinue the Work that way. At *Stanton* they have little of the Red Earth or *Malm* on the Surface, but come immediately to an *Iron-Gritt* or *grey Tile-Stone*, which is a Fore-runner of the *Coal-Clives*; in all other Matters they agree with the Works near *Stony*:

In the same Parish of *Stanton Drew*, a little to the Eastward, they have another Coal-work, but the Veins are in all respects different from the former. Their Drift or Course is to the Eleven a Clock Sun, as they term it, they *Pitch* to the Five a Clock Morning, and rise to land; consequently to the Five a-Clock Evening-Sun. They have several Veins, but as yet only three are thought worth working. The uppermost about three

Feet thick small *Lime-Coal*. The next is about three Fathom under it, about two Feet and an half thick, fit for culinary Uses: the undermost is about the like Depth under the former, only 10 Inches thick, but good hard Coal.

At *Clutton*, about two Mile from these latter, in the same Drift, *viz.* almost to the South East and by South, these last Veins appear again. The Surface here is red, and so continues to ten, and sometimes to fourteen Fathom, and in other respects agree with the last-mention'd Works at *Stanton-Drex.*

At *Burnet*, *Queen-Charlton*, and *Bristleton*, they have Four Veins which Pitch to the North nearly, and consequently the Drift lies almost East and West. The Surface is red land generally to the Depth of four or five Fathom. The uppermost is from three to six Feet thick at *Bristleton*, but less at *Charlton* and *Burnet*. The next, call'd *Pot-Vein*, is six Fathom under the former, eighteen Inches thick, all hard Coal. *Thirdly*, The *Trench-Vein*, 7 Fathom under the other, which is from two Feet and half to three Feet thick, all solid Coal. *Fourthly*, *Rock-Vein*, always distinguish'd by a Rock of Paving-Stone, call'd *Fenant*, lying over it, which Rock is sometime twenty Feet thick, or more, and therefore this Vein is never wrought in the same Pit with the former Vein, but about 200 Yards more to the South, or to Land, as they term it. It's computed seven Fathom under the former.

This is all I can say in relation to the different Veins of Coal and Earth in the Coal-works in these Parts; wherein all agree in the Oblique Situation of the Veins; and every Vein hath its *Cliff* or *Clives* lying over it, in the same oblique manner. All of them Pitch or Rise about Twenty two Inches in a Fathom, and almost all have the same *Strata* of Earth, Malm,

and

and Rock over them, but differ in respect to their Course or Drift, as also in Thickness, Goodness, and Use.

Now as Coal is here generally dug in Valleys, so the Hills, which interfere between the several Works before mentioned, seem also to observe a regular Course in the *Strata* of Stone and Earth found in their Bowels: For in these Hills (I mean those only that are dispers'd between the Coal-Works above mention'd) we find on the Summits a stony Arable mixt with a spungy yellowish Earth and Clay; under which are Quarries of *Lias*, in several Beds, to about eight or ten Feet deep, and six Feet under that thro' yellowish *Loom*, you have a blue Clay enclinable to *Marle*, which is about a Yard thick: Under this is another Yard of whitish *Loom*, and then a deep blue Marle soft, fat, and soapy, six Feet thick; only at about two Feet thick, it is parted by a *Marchasite* about six Inches thick. But as this swells beyond the Bounds of a Letter, I must defer the farther Description of these and some *Lead-Mines* to another Opportunity; only 'tis to be noted, that these Beds of *Stone* and *Marle*, different from *Coal*, lie all Horizontal.

*Your humble Servant,*

John Strachey.

